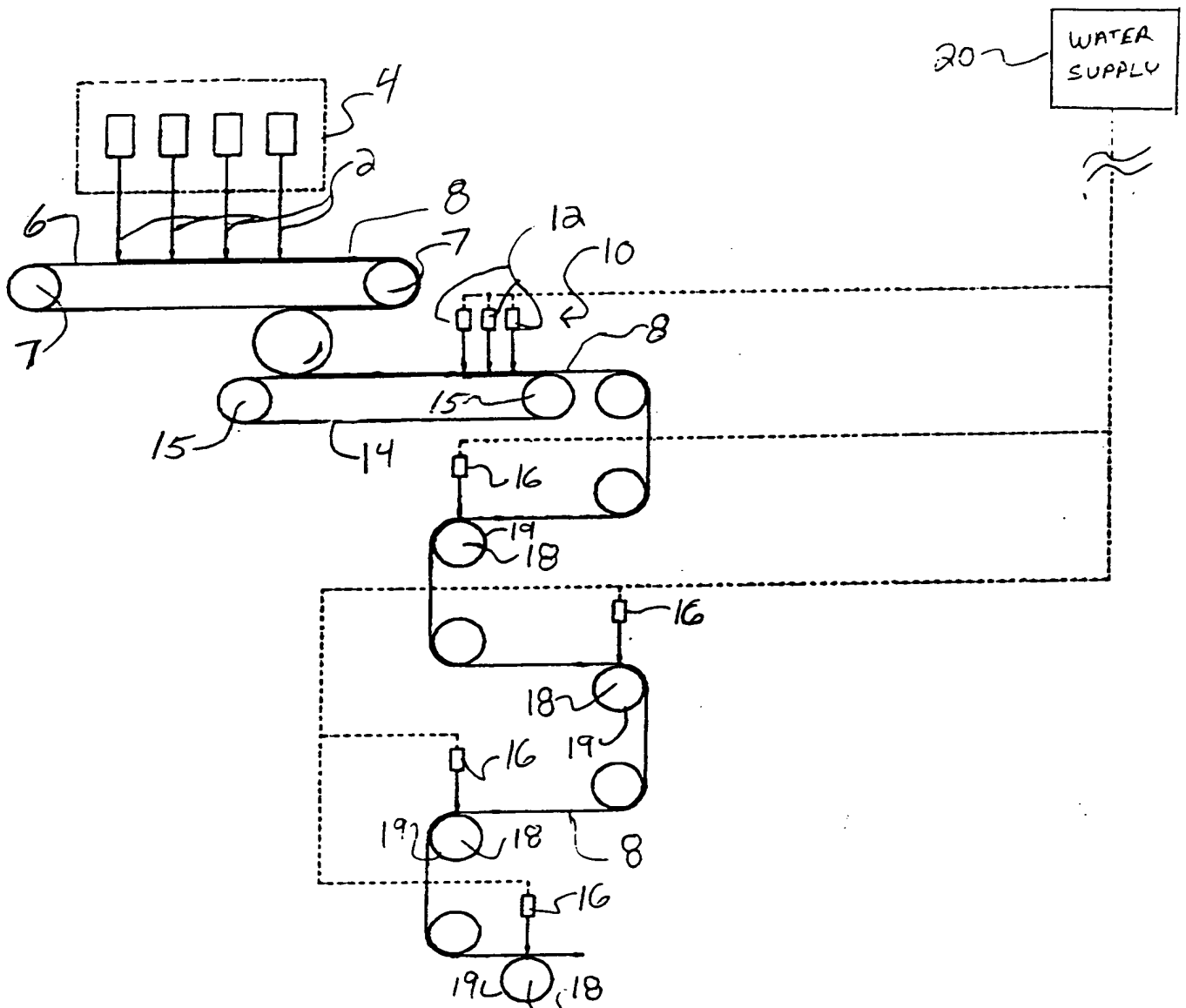


FIG. 1

660227-4452460



660227 44557460

FIG. 2

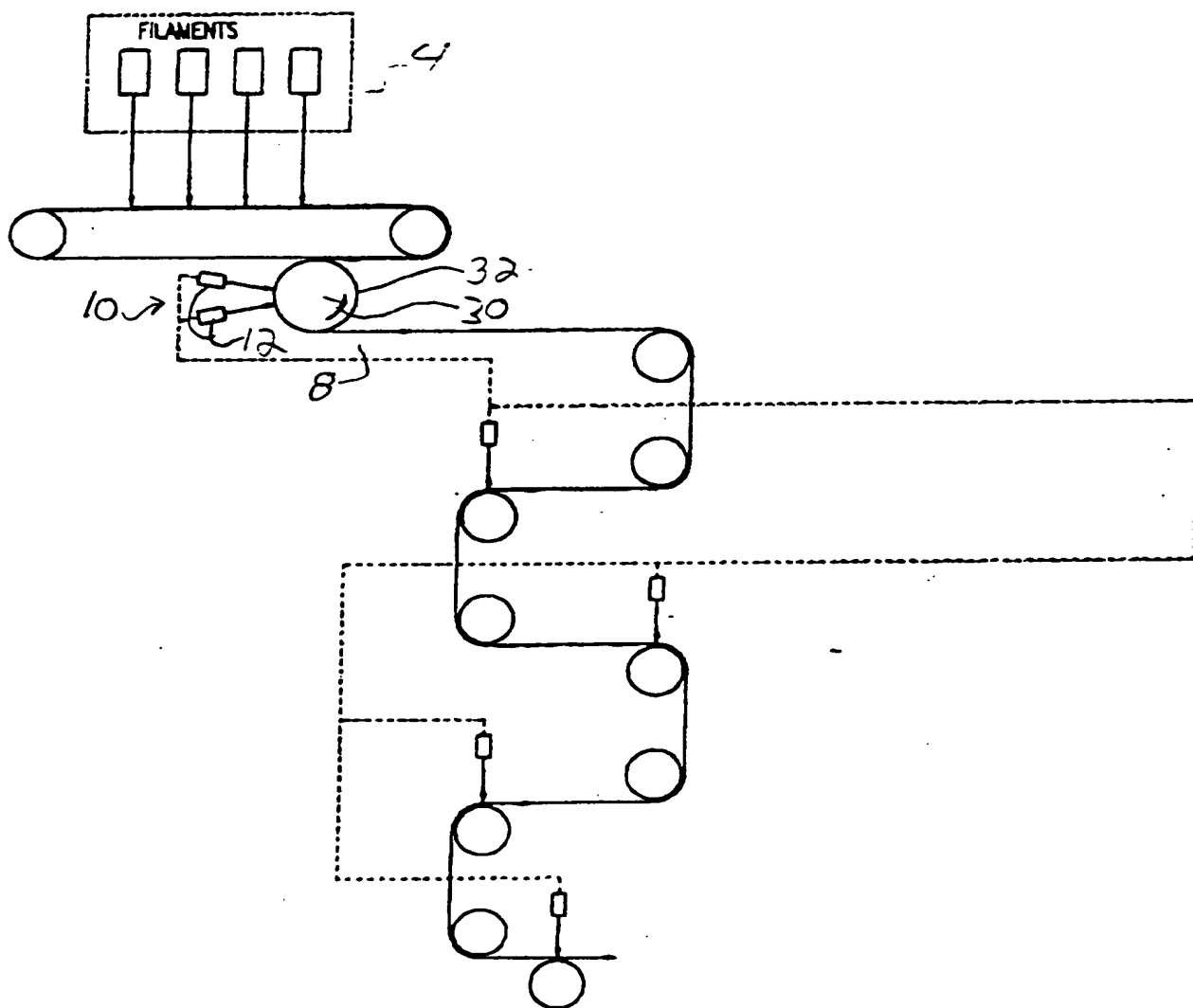


FIG. 3A

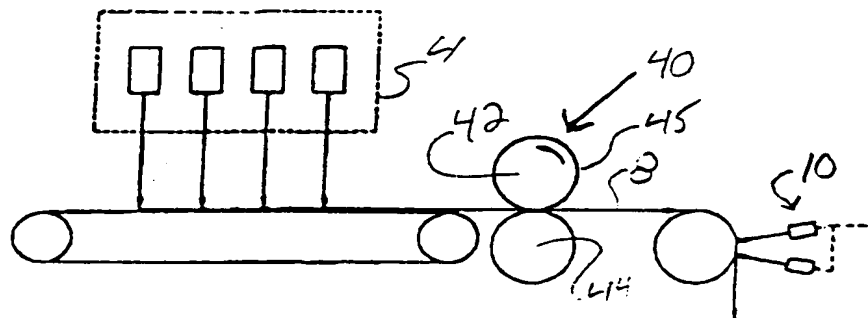


FIG. 3B

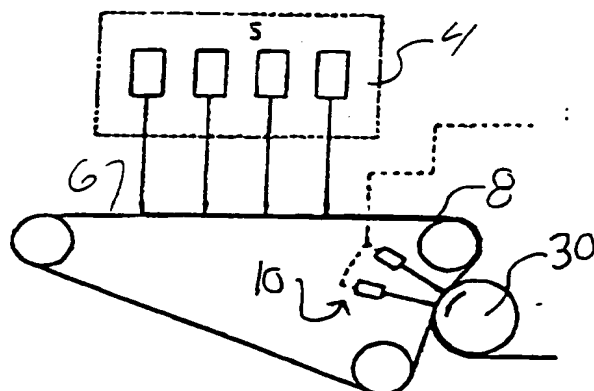


FIG. 3C

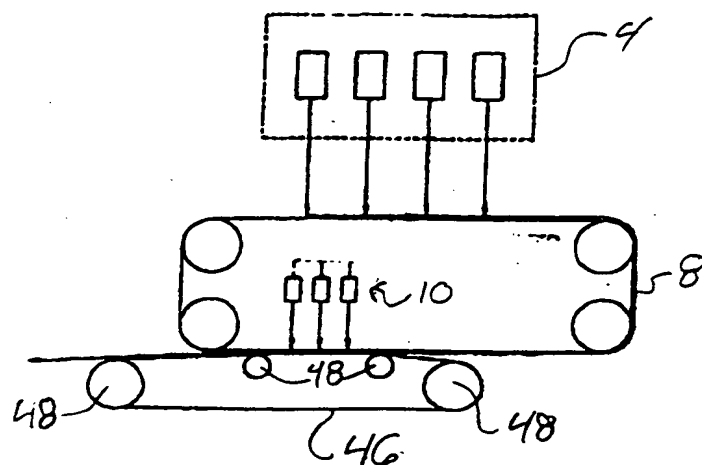
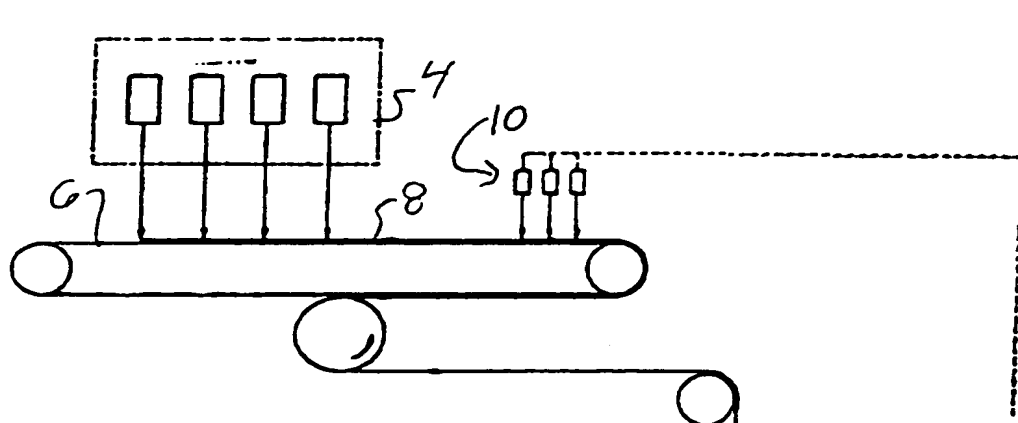
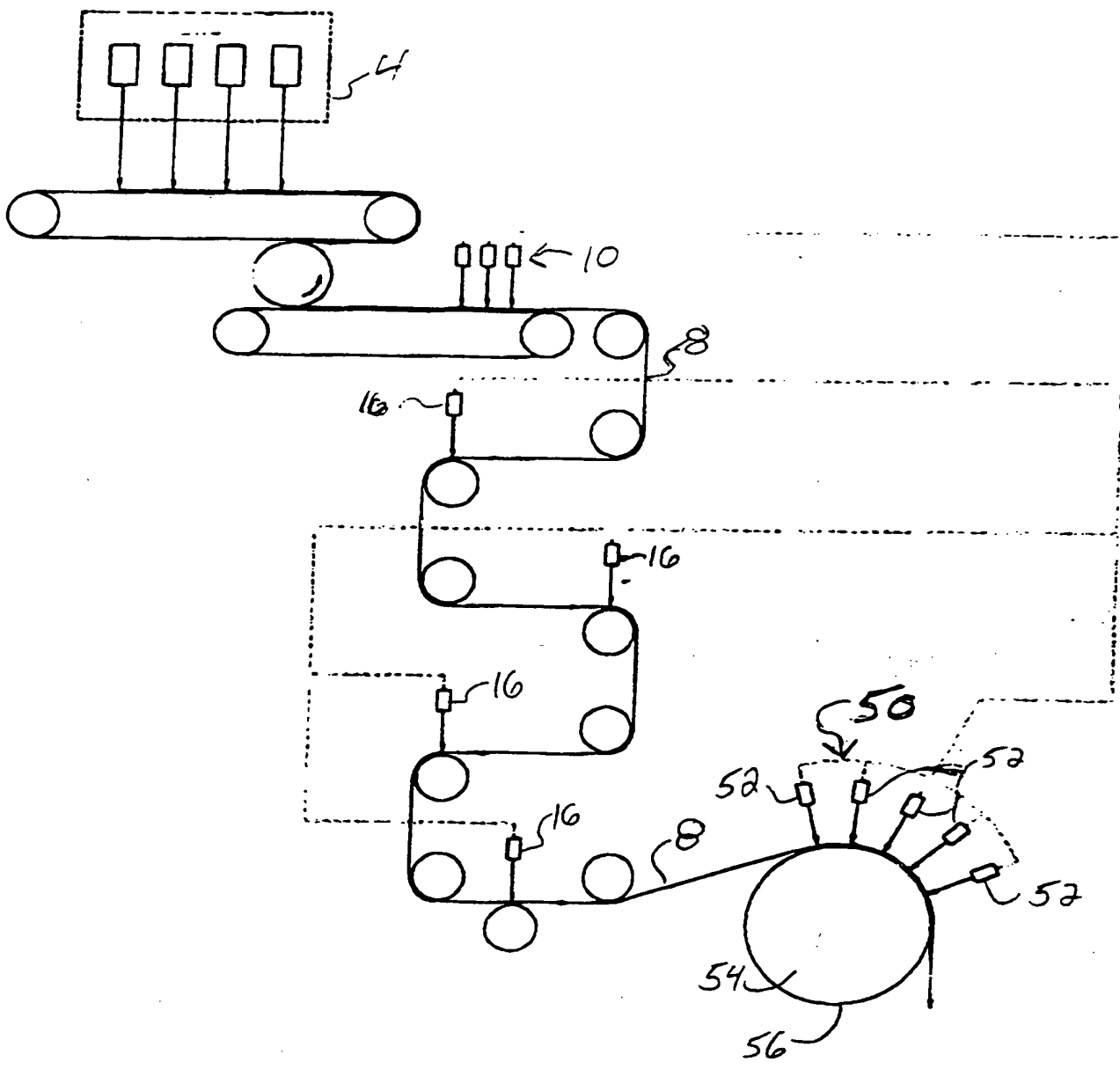


FIG. 3D



660227-445460

FIG. 4



660227-4433460

FIG. 5A

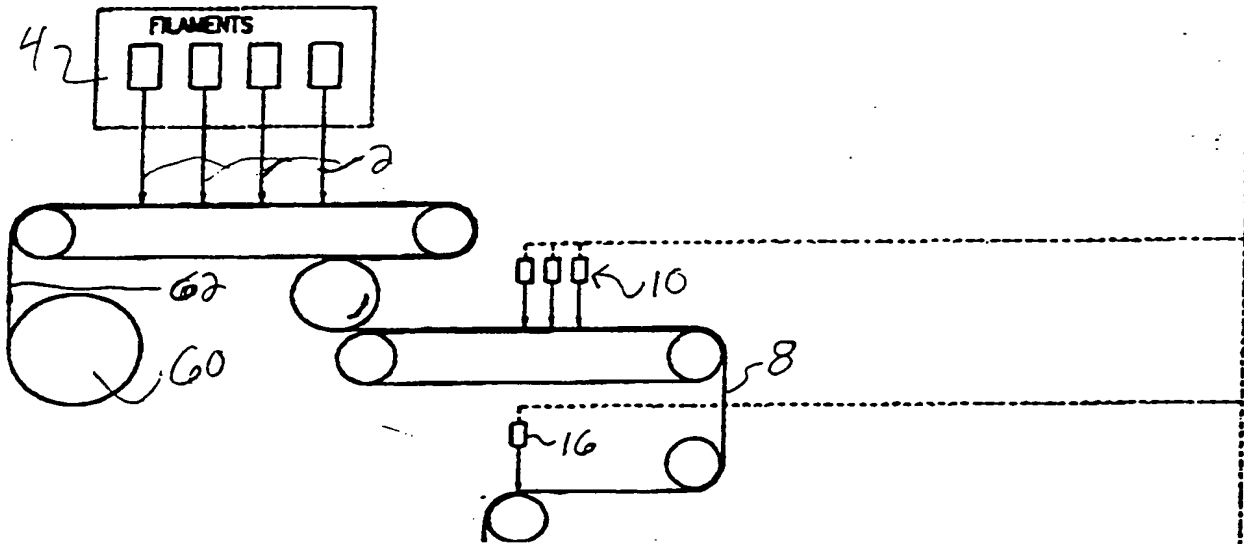
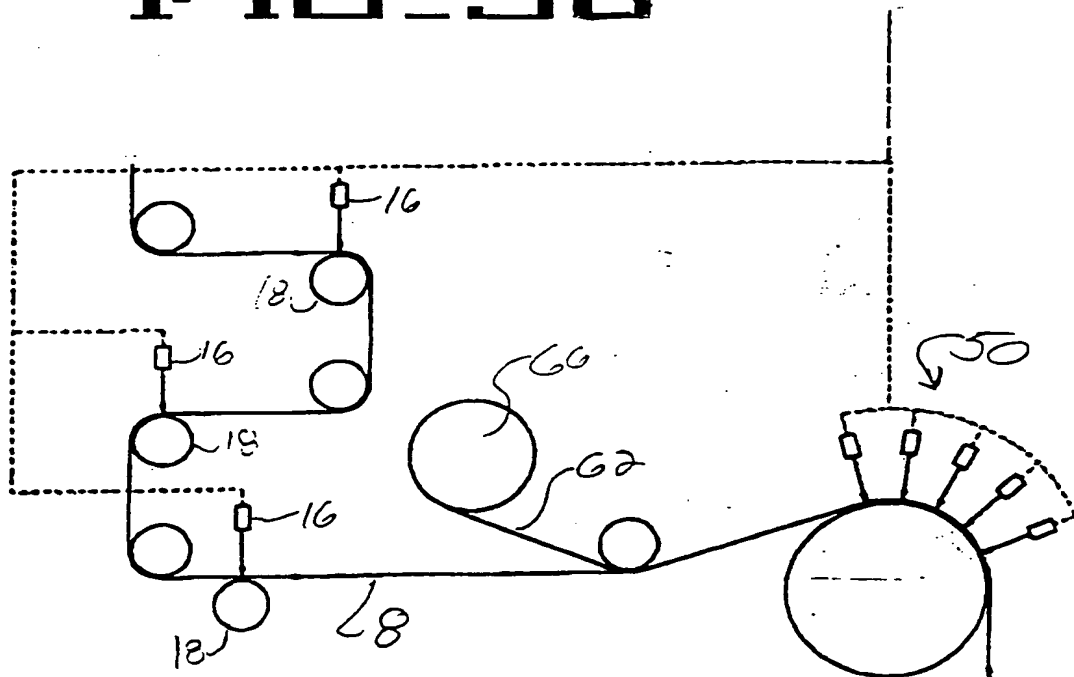


FIG. 5B



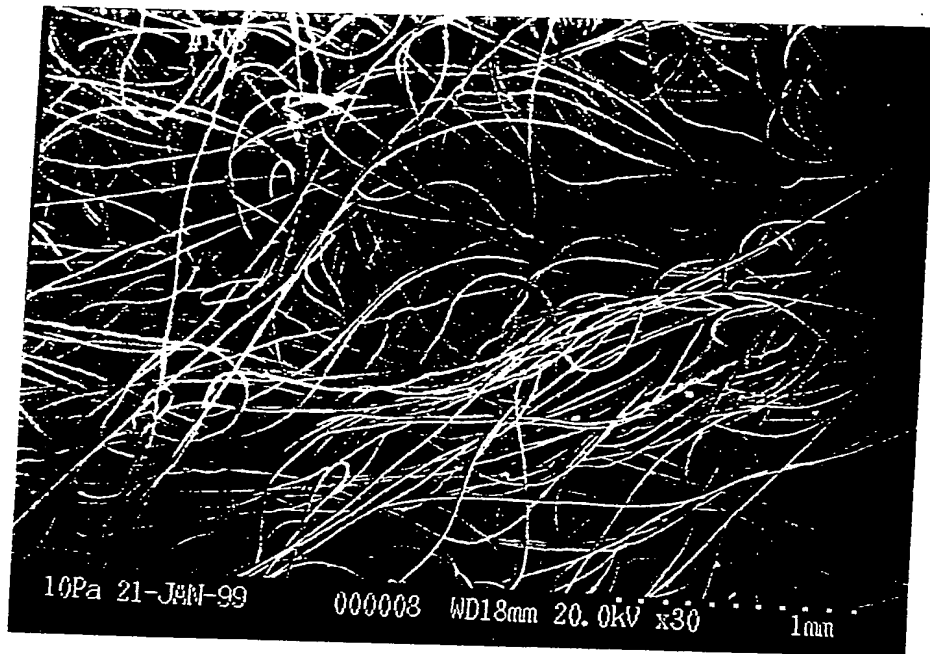


Figure 6

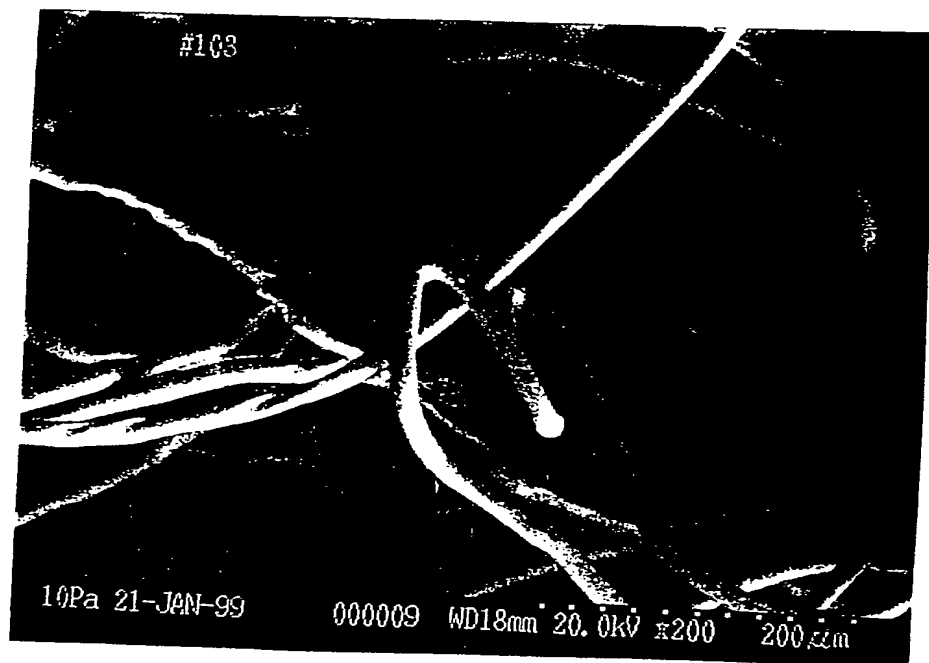
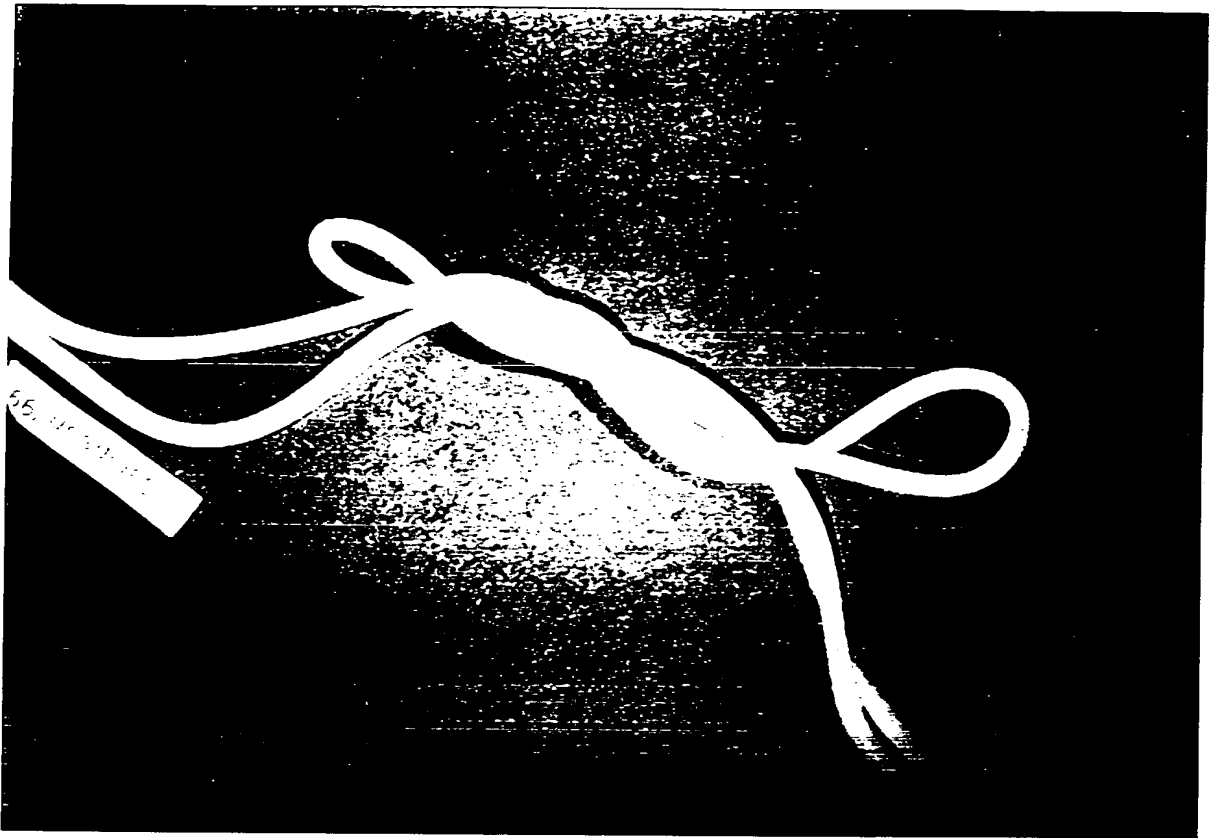


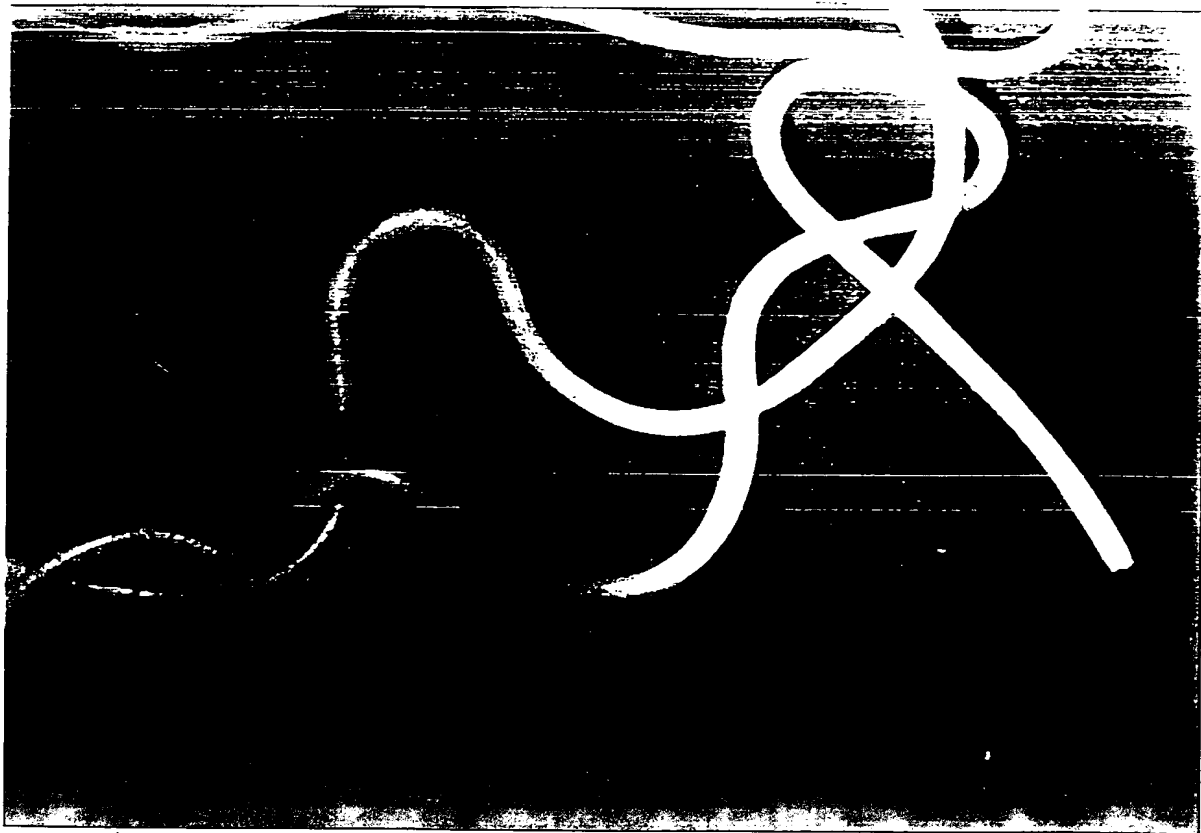
Figure 7

1

● FIG_7 ●

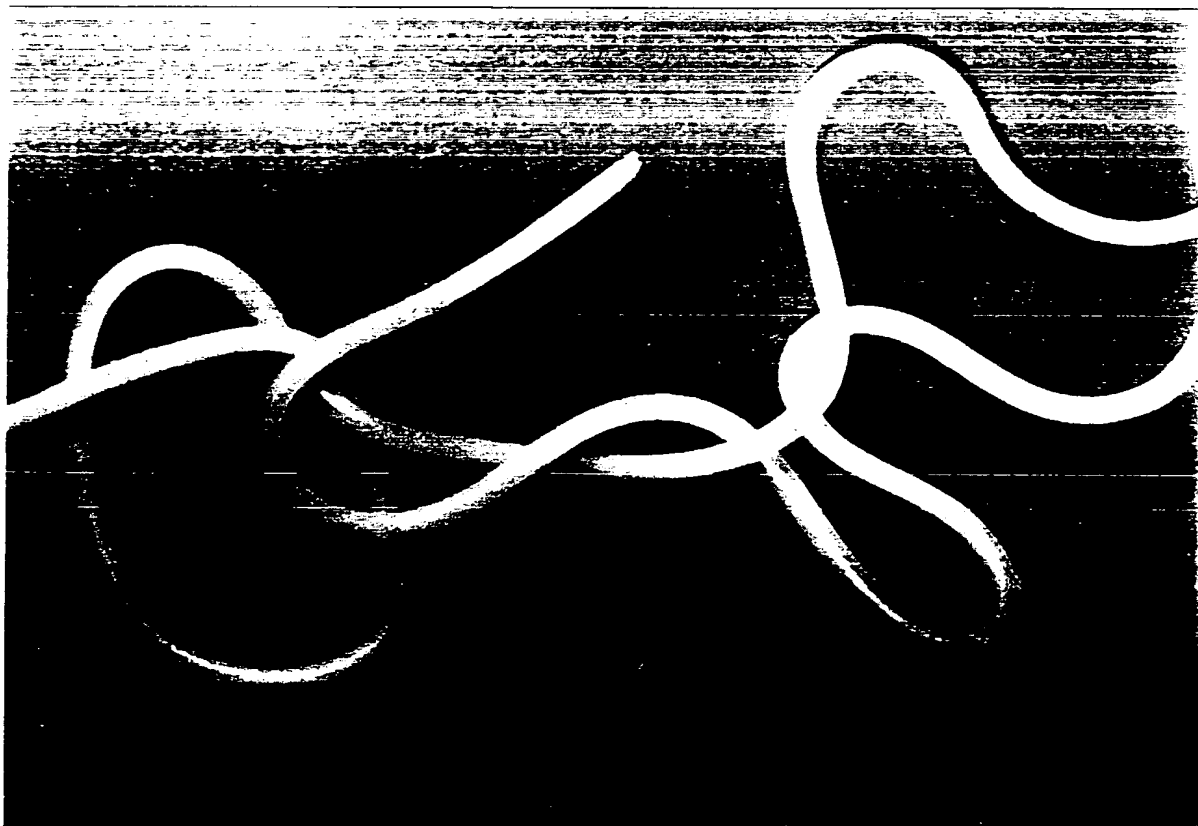


FIG_7B



09475544-123009

FIG. 7C



0947544-23099

09475544, 123099

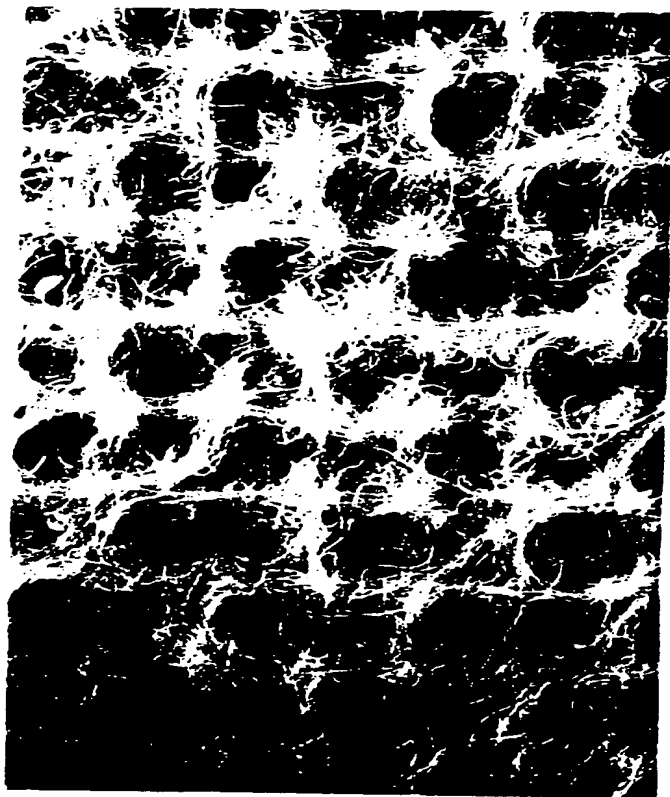


Figure 8: Prior Art

1
FIG. 8A

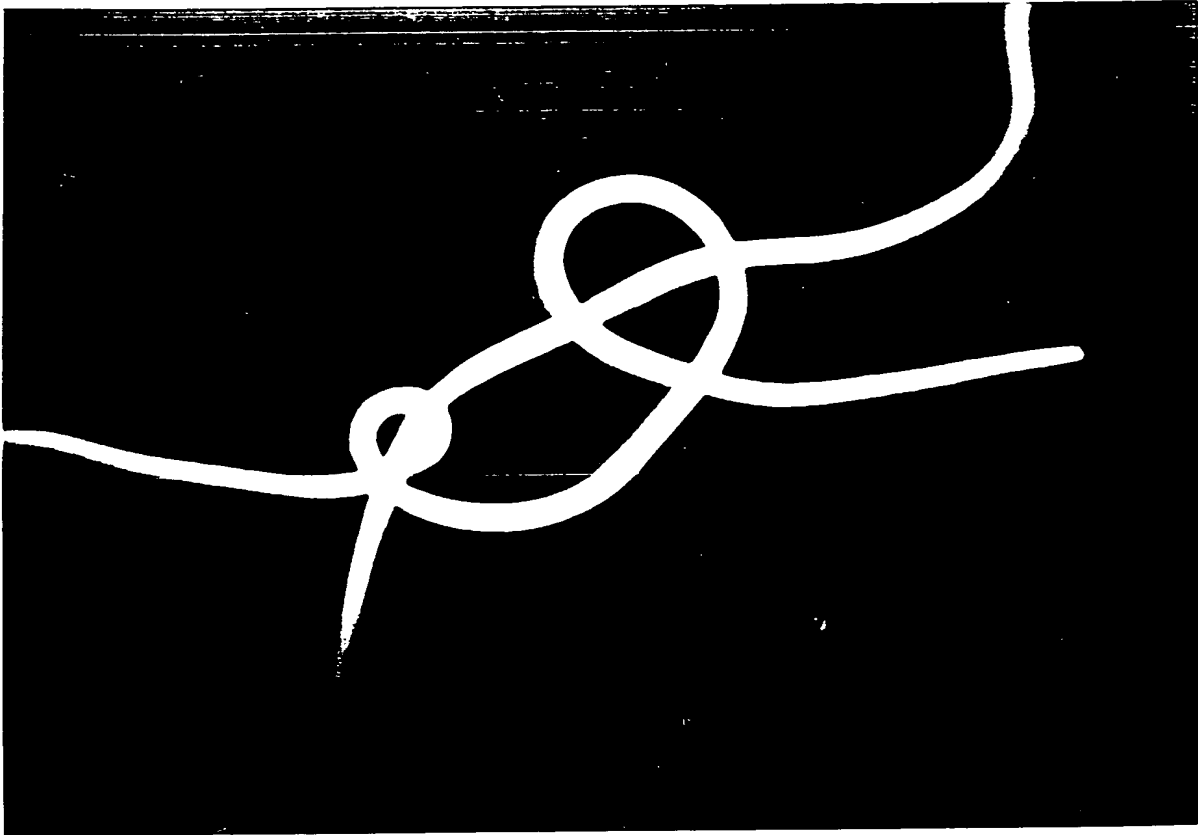
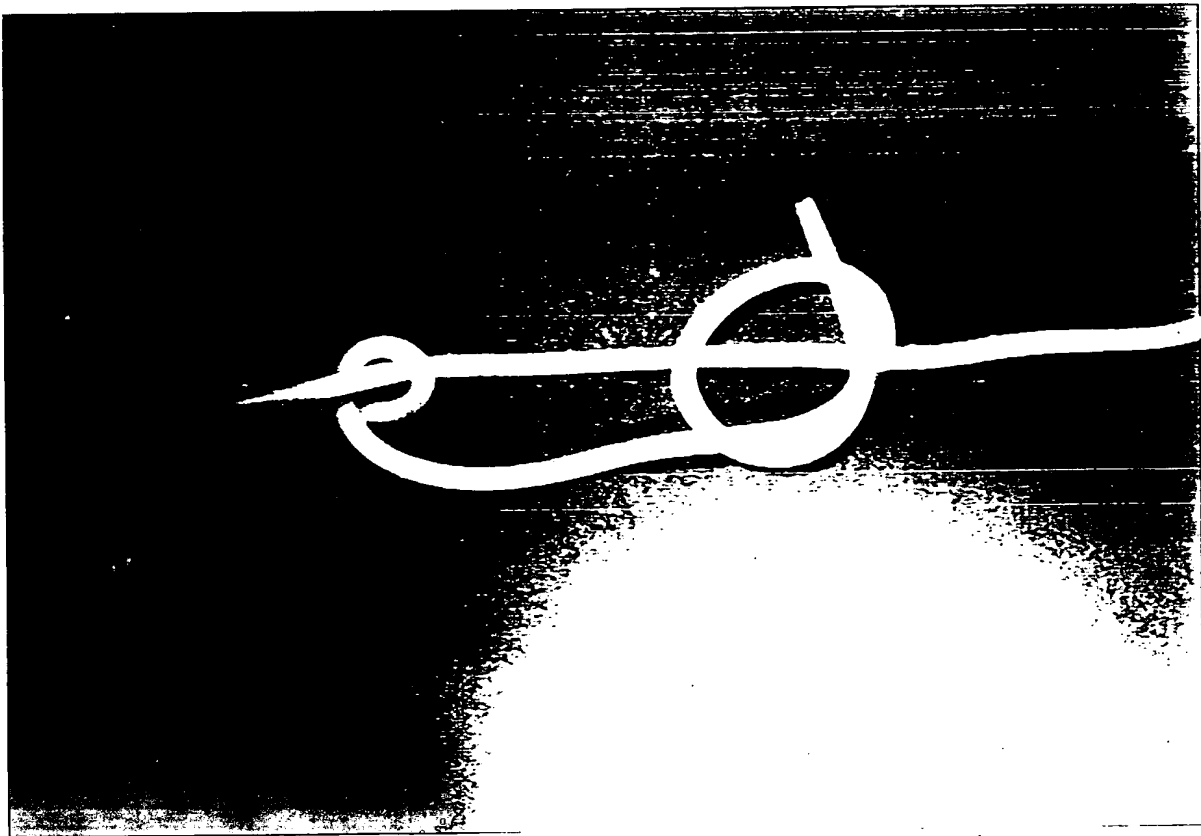


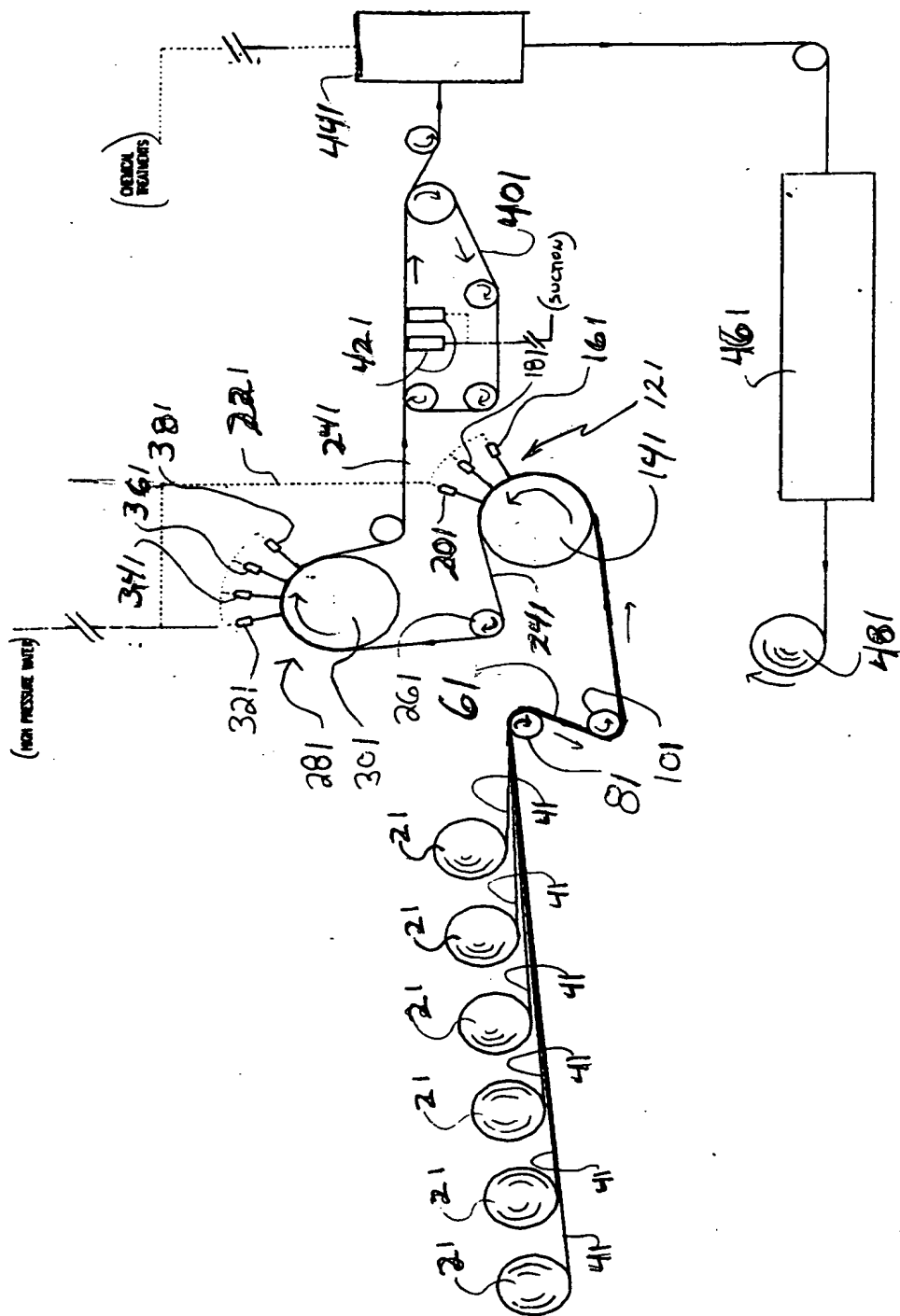
FIG. 8B



SECRET 4452460

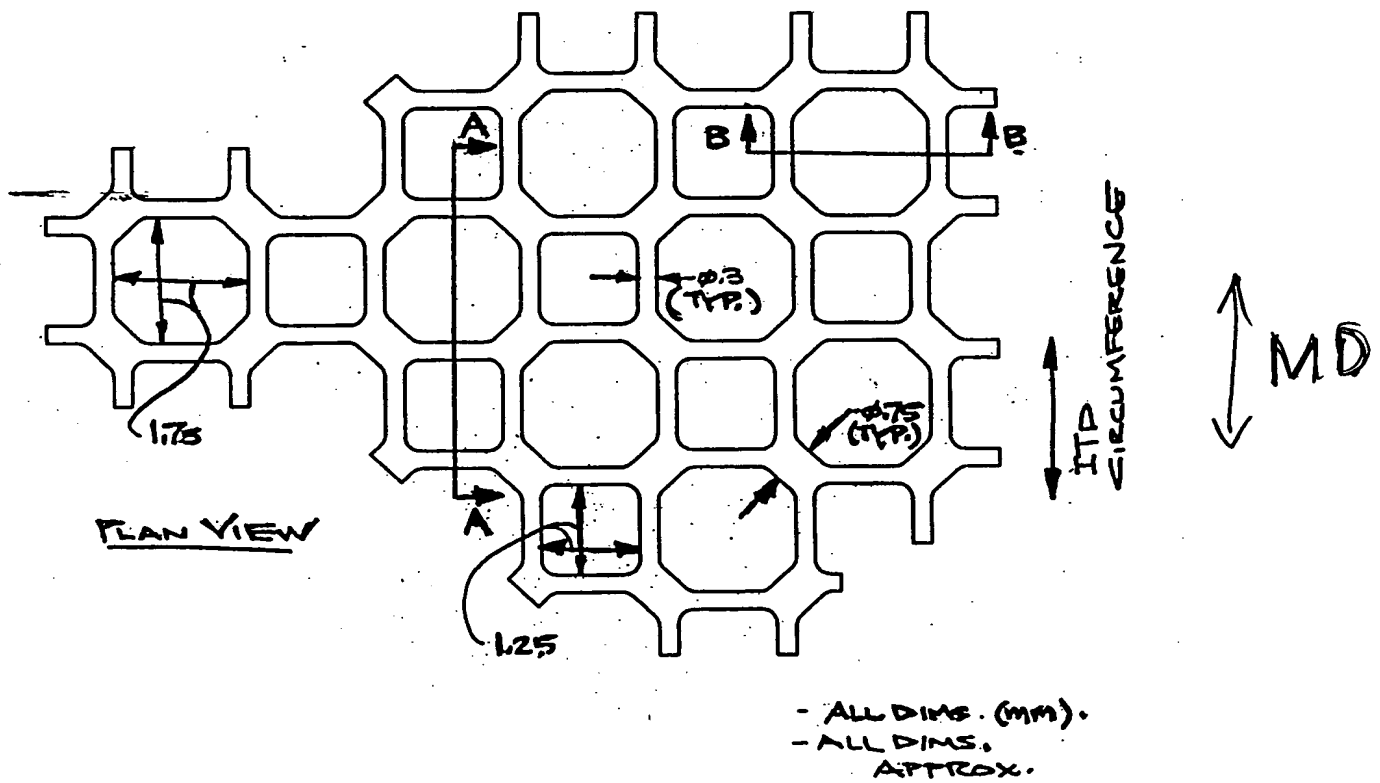
1

EGF

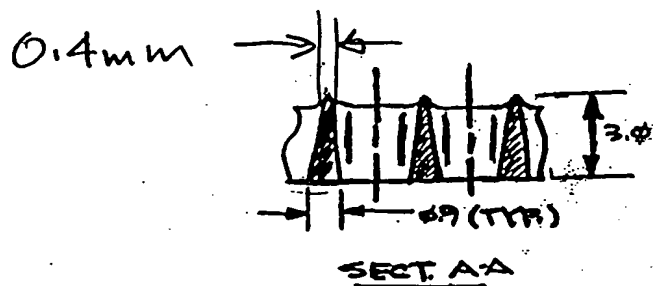


0947544-12009
SECRET 44592460

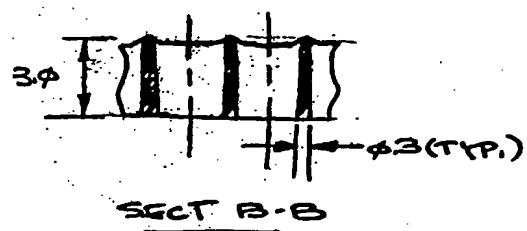
FIG 10



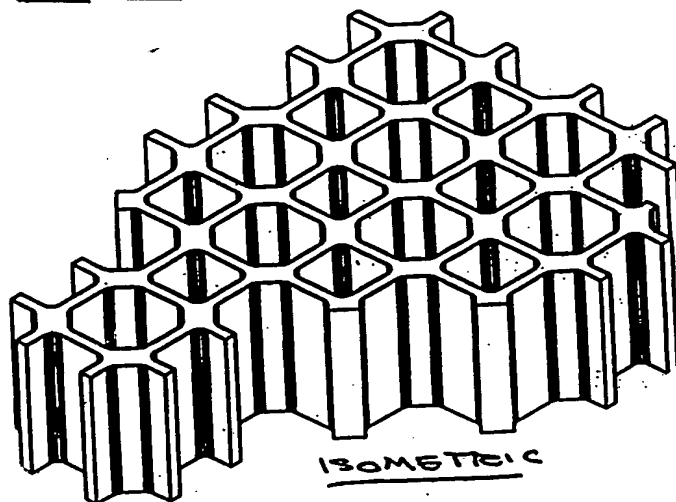
FIG_10A



FIG_10B



FIG_10C



66052T 4455Z460

FIG. 11A

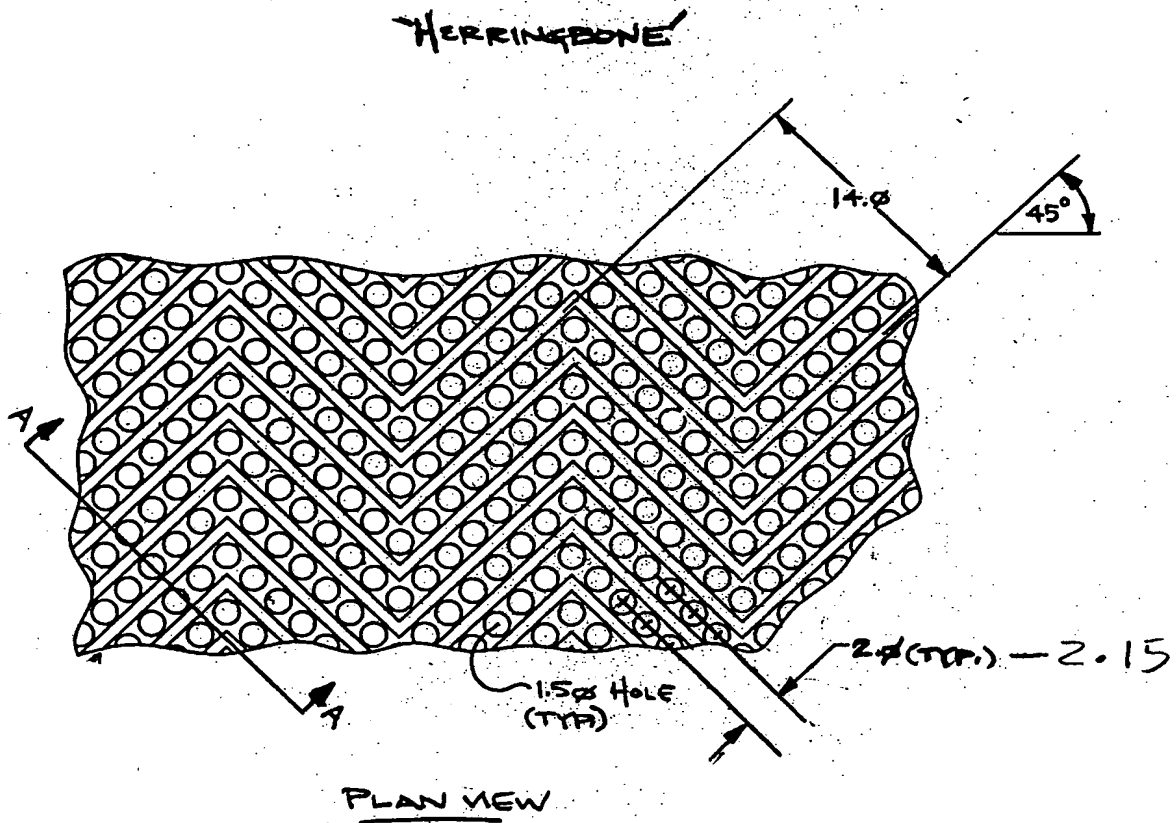
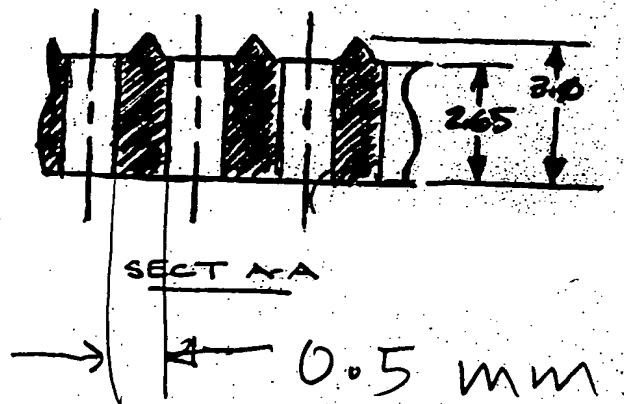


FIG. 11B



Tensile Comparison - 33 gm/m2 Sample - after entangling steps

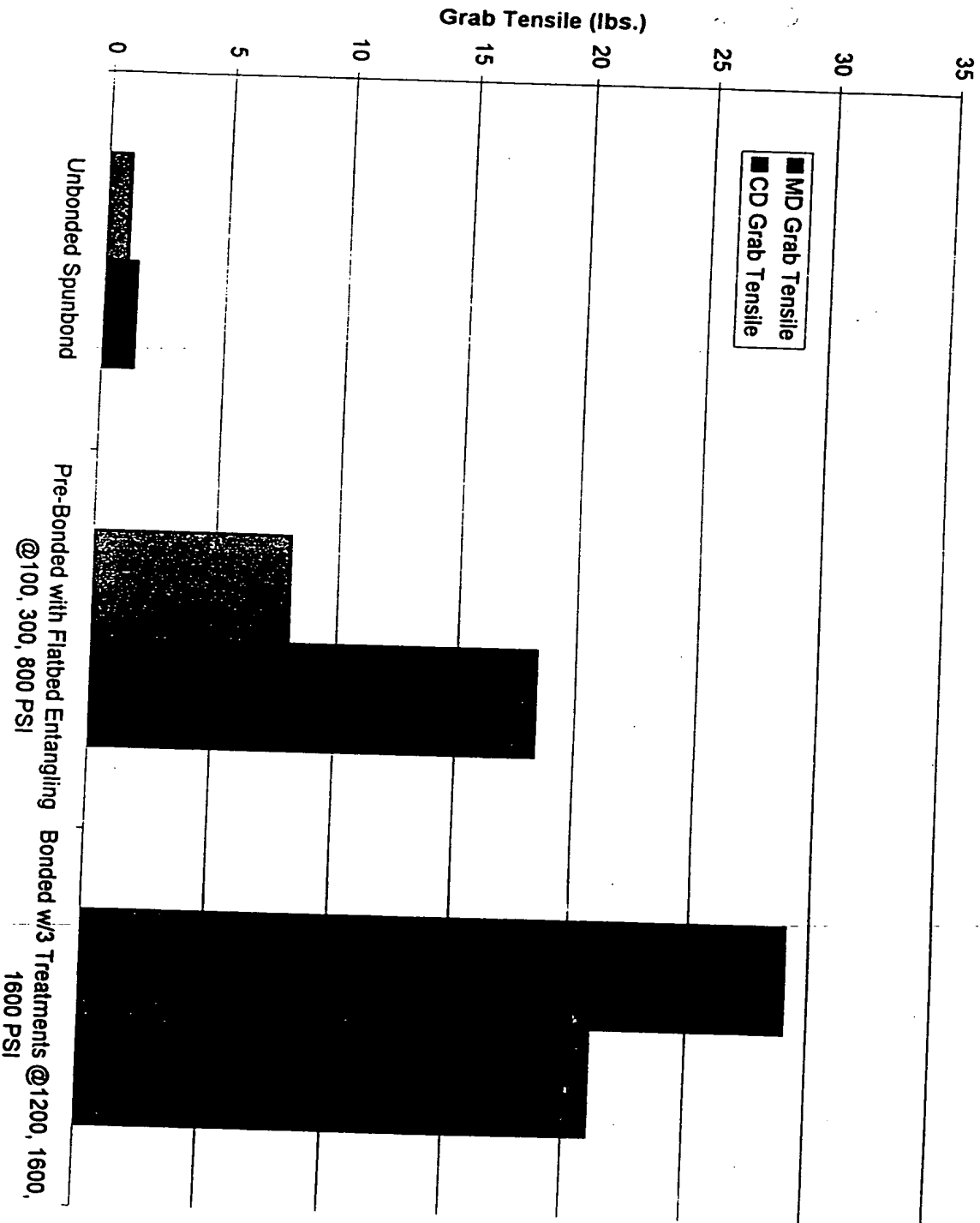


Chart 1

09475344 123099

Comparison: 132 gm/m2 Sample Treated Two Times

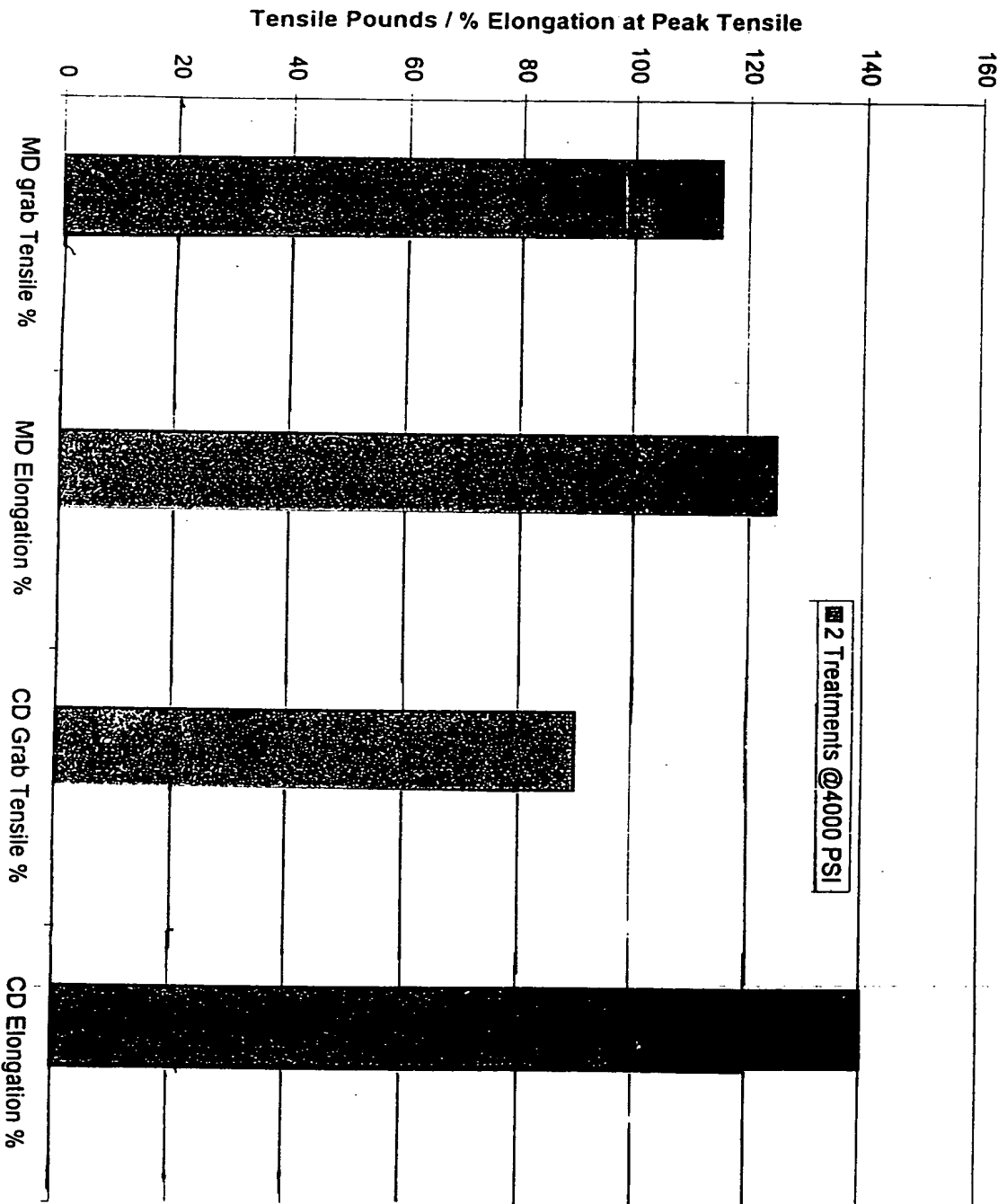


Chart 2

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Tensile Comparison: 68 gm/m2 Entangled and Patterned - PP Staple Fiber vs. PP Filament Web

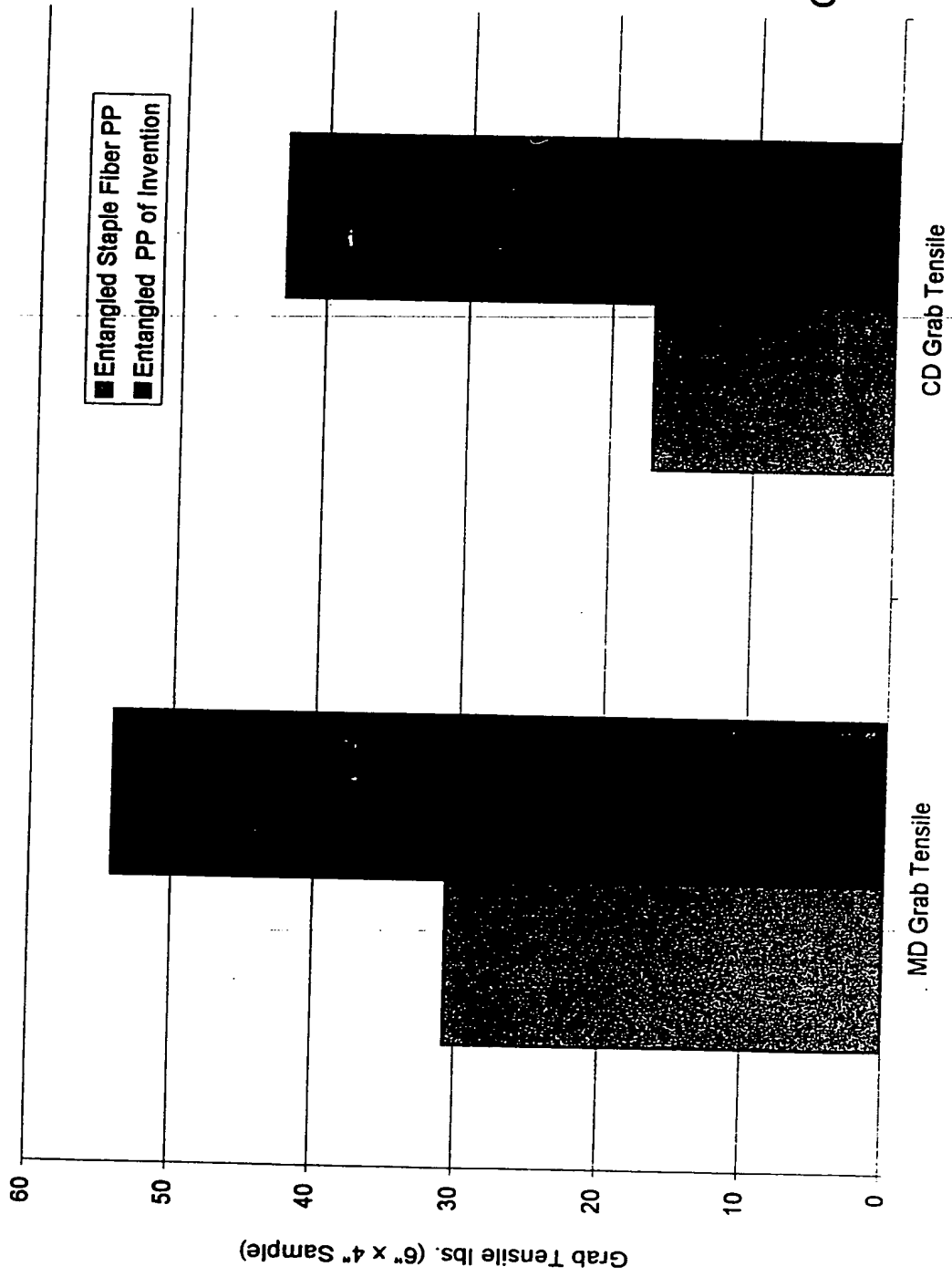


TABLE I

ID	type	basis weight	denier	water/jets process/pattern	jet pressures					total energy HP-hr/lb.	entanglement		Fiber Interlock	Grab Tensile		Tear Tear		Abrasion cycles	Strip Tensile, #		Elongation		Density g/cm ³
					1.00	2.00	3.00	4.00	5.00	6.00	completeness	frequency		CD	MD	CD	MD		CD	MD	CD	MD	
W	TBCW	34.00	2.20								1.04	45.43	9.66	10.00	22.00	3.00	9.00	54.00	1.00	5.00	58.00	49.00	0.14
X	TBCW	68.00	2.20								0.98	52.03	19.15	25.00	37.00	7.00	15.00	18.00	4.00	7.00	52.00	51.00	0.45
106	Spinlace	34.00	1.67	flatbed & roll *	100	1200	1200	800	1600	1600	1.10	34.40	46.29	29.00	50.00	18.00	25.00	40.00	4.00	13.00	118.00	117.00	0.06
401A	Spinlace	34.00	1.67	Apex 33x28							1.60	11.86	45.22						2.90	4.90			0.06
103	Spinlace	68.00	1.67	flatbed & roll *	100	1600	1600	1600	1600	1600	0.70	9.72	40.42	81.00	116.00	34.00	55.00	5.00	6.00	14.00	137.00	120.00	0.17
402A	Spinlace	68.00	1.67	tricot sleeve							1.90	9.91	41.30						5.80	6.60			0.08
102	Spinlace	68.00	3.00	flatbed & roll *	100	1600	1600	1600	1600	1600	0.70	12.46	21.34						2.10	4.00			0.06
402C	Spinlace	68.00	3.00	tricot sleeve							1.90	13.38	35.13						2.40	8.20			0.05
302	Spinlace	100.00	3.00	flatbed & roll *	100	1600	1700	1700	1700	1700	0.50	13.91	19.70						4.37	5.80			0.07
Y	SB	34.00	1.67								0.98	103.89	37.33	24.00	47.00	4.00	9.00	38.00	3.00	10.00	39.00	37.00	0.15
Z	SB	68.00	1.67								0.79	26.36	32.46	32.00	51.00	14.00	24.00	10.00	3.00	8.00	33.00	20.00	0.52
201	HET	34.00	2.20	flatbed & roll *	100	600	1200	800	1600	1600	0.58	19.07	17.42	10.00	20.00	5.00	11.00	28.00	1.00	5.00	127.00	103.00	0.05
401B	HET	34.00	2.20	Apex 33x28							1.15	15.33	21.09						1.01	2.35			0.06
204	HET	68.00	2.20	flatbed & roll *	100	600	1200	1600	1600	1600	0.86	17.45	22.21	42.00	56.00	6.00	16.00	5.00	3.00	8.00	128.00	111.00	0.18
402B	HET	68.00	2.20	tricot sleeve							1.13	19.54	25.93						2.90	3.80			0.06

notes: TBCW = thermally point bonded carded webs
 Spinlace = water jet entangled continuous filament webs
 SB = thermally point bonded spunbond
 HET = hydroentangled carded staple fiber webs